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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/087,016	03/15/2002	John M. Belcea	43487	3370

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06/24/2004

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EXAMINER

NGUYEN, VAN KIM T

ART UNIT

PAPER NUMBER

2661

DATE MAILED: 06/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/087,016

Applicant(s)

BELCEA, JOHN M.

Examiner

Van Kim T. Nguyen

Art Unit

2661

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) 4 and 16 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-15, 17-32, 39 and 40 is/are rejected.
- 7) ☒ Claim(s) 33-38 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This Office Action is responsive to communications filed on March 24, 2004.

Applicant's arguments with respect to claims 1-40 have been considered but are moot in view of the new grounds of rejection.

Of pending claims 1-40, claims 4 and 16 have been cancelled.

Claim Rejections - 35 USC § 102

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3, 5-15, 17-24, 28, and 33-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leung (US 6,519,705).

Regarding claims 1-3, and 13-15, as shown in Figures 1-8, Leung discloses a method for determining a transmission power over a link between a source (105) and a destination nodes (130.) in a wireless network (10) comprising: predicting path loss (estimate the interference level) in the link as a function of time based on information provided to the source node from the destination node pertaining to characteristic of at least two messages (measurement of interference power can be made at any future time slot $n+1$; col. 4: lines 39-59) that were transmitted by the source node for receipt by the destination node (col. 4: lines 4-39); determining a noise factor (F_n , Q_n , R_n) representative of noise at the destination node (col. 6: line 42 – col. 7: line 50); and calculating at least one of the power level and rate at which the data is

transmitted over the link from the source node to the destination node based on the predicted path loss and noise factor (cols. 3-7).

Regarding claims 5-6, 11, 17-18, and 23, Leung also discloses the path loss and noise factor are computed dynamically as conditions of the link change over time, and the noise factor increases or decreases an estimated noise factor based on each of message information for a plurality of messages (cols. 3-7, esp. col. 6: lines 34-55).

Regarding claims 7-8, 19, 25-26, 29-30, Leung also discloses calculating at least the one power level and rate based on the predicted path loss, the noise factor, short term fading experienced by the message and sensitivity of the destination node (col. 1: lines 59-66).

Regarding claims 39-40, Leung also discloses calculating the transmit power level and data rate to minimize an amount of energy used for transmitting the data over the link (col. 6: lines 9-21).

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 9-10, 12, 21-22, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leung, as applied to claims 1, 13, 25, 28-29, and 32 above, in view of Zeira et al (US 6,597,723).

Leung discloses a method and system for determining at least one power level and rate at which data transmitted over a link between a source and destination node, with all the recited limitations.

However, Leung does not explicitly call for discloses computing the receiver sensitivity based on energy used by a transmitter of the source node to transmit a bit of information of the message at a particular rate.

As shown in Figures 1-6, Zeira teaches computing the receiver sensitivity based on energy used by a transmitter of the source node to transmit a bit of information of the message at a particular rate (cols. 1-5; esp. col. 1: lines 55-62, and col. 4: lines 27-67).

Since it is highly desirable to improve the performance of wireless networks and ensure that each member of the network transmit the smallest power necessary to maintain a good quality link, power control within a network is critical. Power control not only helps prolongs battery life for the mobile units, but also can dramatically enhance the signal-to-interference-plus-noise ration (SNIR) in the system, and thus its error performance and capacity. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply Zeira's method of determining transmission rate in Leung's power control system, motivated by the needs to maintain a good transmission link and preserve mobile units' energy levels.

Allowable Subject Matter

Claims 33-38 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Art Unit: 2661

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Van Kim T. Nguyen whose telephone number is 703-305-7692. The examiner can normally be reached on 8:00 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Douglas W. Olms can be reached on 703-305-4703. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

vkn



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